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Liphistiid Spiders (Araneae, Mesothelae) of South Thailand¹⁾

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Abstract Three new liphistiid spiders are described under the names *Liphistius niphanae*, *bicoloripes* and *schwendingeri* spp. nov. from the peninsular part of southern Thailand. Of these, the first-named one is closely related to *L. trang* already known from the same area. The second species is related to Malaysian *L. desultor*, while the remaining one is an isolated species with peculiar genital organ. Relationship is discussed for each species.

This is the second part of the results of systematic studies on the liphistiid spiders obtained during the zoological expedition to Malaysia and Thailand made by the National Science Museum, Tokyo, in 1987. It deals with descriptions of three new species of the genus *Liphistius* SCHÖDTE, 1849, from the peninsular part of southern Thailand.

Though lying at the centre of the generic range, this narrow area has hitherto been known to harbour only one species, *Liphistius trang* PLATNICK et SEDGWICK, 1984, which was described from Trang Province near Thai-Malaysian Borders (PLATNICK & SEDGWICK, 1984; SCHWENDINGER, 1987). One of the three new species is related to *L. trang* as can be readily surmised, but the other two belong to two different species-groups. This is most unexpected, as will be discussed on later pages.

The abbreviations used in this report are the same as those explained in my preceding paper (ONO, 1988).

All the type specimens are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo (NSMT–Ar).

I wish to express my hearty thanks to Dr. Niphan RATANAWORABHAN and Mr. Jarujin NABHITABHATA, Thailand Institute of Scientific and Technological Research, Bangkok, for their kind aid in the field researches, to Dr. Shun-Ichi UENO, National Science Museum, Tokyo, for his generous support in this study and for revising the manuscript of this paper, and to Mr. Peter J. SCHWENDINGER, Institute of Zoology, University of Innsbruck, for informations on the liphistiid spiders of Thailand.

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Liphistius niphae sp. nov.

(Figs. 1-3)

Description (based on the female holotype; male unknown). Measurement (mm). Body length 23.66; prosoma length 11.67, width 10.21; opisthosoma length 10.22, width 8.45; sternum length 5.33, width 2.33. Lengths of palp and legs:

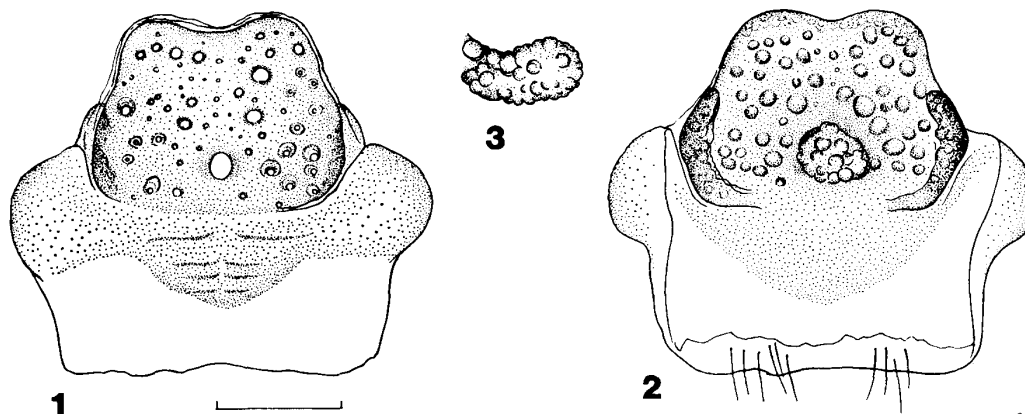
	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
Palp	4.17	—	5.06	3.78	6.39	19.40
Leg I	2.56	4.89	5.33	4.45	7.44	24.67
II	2.61	5.49	5.44	4.61	7.71	25.86
III	3.00	6.66	6.10	4.22	7.68	27.66
IV	4.33	10.43	7.83	5.00	10.21	37.80.

Prosoma. Ocular tubercle wider than long (length/width 0.77), ALE>PLE>PME>AME (38:32:22:4), AME-AME/AME-ALE 0.60, PME-PME/PME-PLE 2.00, ALE-ALE/PLE-PLE 0.40, ALE-ALE/ALE-PLE 1.60, median ocular area trapezoidal, length/width 0.65, wider behind than in front (anterior width/posterior width 0.45, clypeus/ALE-ALE 1.25. Chelicera with 10 small teeth on promargin of fang furrow. Superior and inferior claws of tarsi of legs each with two teeth, claw of palpal tarsus with three denticles.

Opisthosoma oval, longer than wide.

Female genitalia (Figs. 1-3). Anterodorsal pore-plate trapezoidal, wider than long, with two weak anterior lobes and two lateral lobes on its ventral surface; racemose spermatheca long, extending ventrad.

Coloration and markings. Prosoma reddish dark-brown with black stripes, ocular tubercle black; chelicera reddish brown, palpal coxae and labium light-brown, the other part of palp and sternum brown; legs brown without annulations. Opisthosoma dark grey, dorsal sclerites brown, ventral sclerites and spinnerets brown.



Figs. 1-3. *Liphistius niphae* ONO, sp. nov. — 1. Female genitalia, dorsal view. 2. Same, ventral view. 3. Spermatheca, lateral view. (Scale: 0.5 mm.)

Variation. Body length 19.20–25.53 mm. One of the paratypes has lighter body colour, indistrict annulations on legs and 11 teeth on chelicera.

Type series. Holotype: ♀ and 2 ♀♀ paratypes, Khao Luang National Park, 120 m alt., Nop Pitam, Tha Sala, Nakon Si Thammarat, South Thailand, 7~8–VIII–1987, H. ONO leg. (NSMT–Ar 1905–1907).

Range. Known only from the type locality.

Etymology. This species is dedicated to Dr. Niphan RATANAWORABHAN, Bangkok.

Remarks. The female genitalia of this new species resemble those of *Liphistius trang* described by PLATNICK and SEDGWICK (1984) from Krachong Forest, Trang, South Thailand, in having two heavily sclerotized lateral lobes on the ventral surface of anterodorsal pore-plate. In view of this diagnostic character, the two species seem to be closely related and to constitute a peculiar species-group of their own, whose range is geographically limited. The type locality of *L. niphanae*, Nop Pitam, about 100 km apart northwards from Trang, is situated on the same mountain range stretching from Surat Thani to Hat Yai for about 250 km.

This new species is distinguished from *L. trang* by the shape of the anterior part of pore-plate in the female genitalia and the body size twice as large as that of the latter.

Liphistius murphyorum PLATNICK et SEDGWICK, 1984, known from Penang Island, Malaysia, may also be related to these species. It possesses two weak anterolateral lobes on its female genitalia, which should be homologous with the lateral lobes found in the Thai species. Having studied the male palp of *L. trang* on the basis of the materials newly obtained from Khao Chong Wildlife Preserve (150 m alt.) near Trang, SCHWENDINGER (1987) found that its male palp resembles that of *L. murphyorum* in the basic structure, particularly in the shape of the embolus. When the male of *L. niphanae* is found in the future, the accurate relationship between these species can be confirmed on a sounder basis.

Liphistius bicoloripes sp. nov.

(Figs. 4–6)

Description (based on the female holotype; adult male unknown). Measurement (mm). Body length 24.98; prosoma length 12.22, width 10.54; opisthosoma length 11.88, width 10.32; sternum 5.61, width 3.11. Lengths of palp and legs:

	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
Palp	4.84	—	4.95	4.18	6.99	20.96
Leg I	2.22	5.05	5.33	4.61	8.27	21.04
II	2.28	5.16	5.44	4.44	8.21	25.53
III	3.00	6.33	5.55	4.83	7.55	27.26
IV	4.10	10.10	7.66	5.12	10.43	37.41.

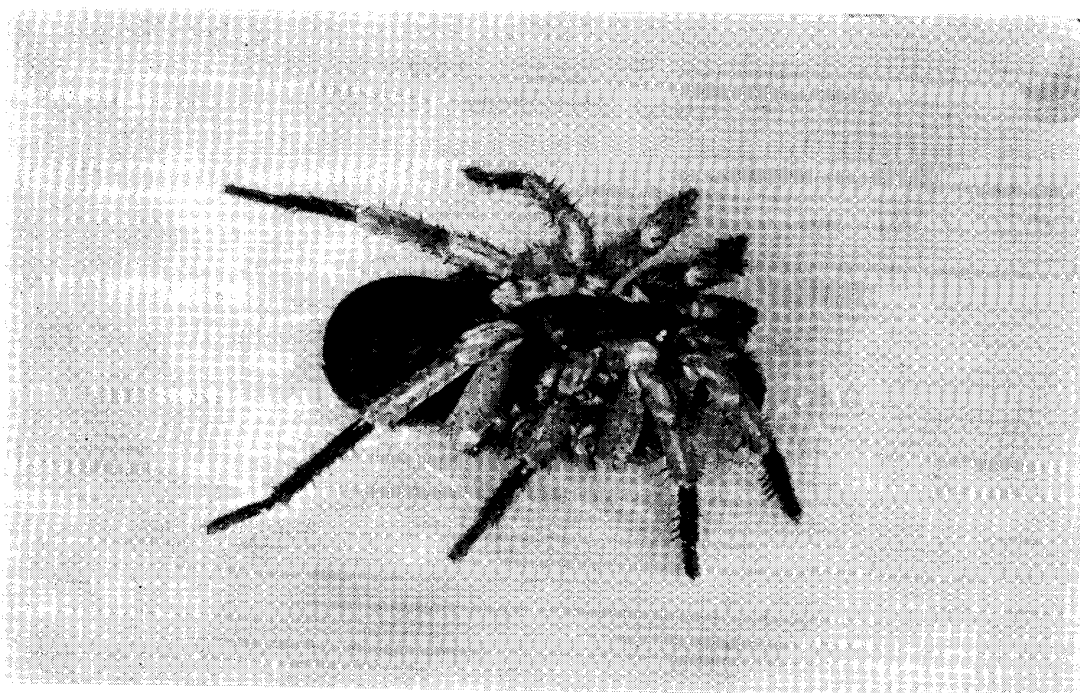


Fig. 4. *Liphistius bicoloripes* ONO, sp. nov., habitus of female.

Prosoma. Ocular tubercle slightly wider than long (length/width 0.91), $ALE > PLE > PME > AME$ (42: 31: 21: 9), $AME-AME/AME-ALE$ 0.55, $PME-PME/PME-PL$ 0.55, $ALE-ALE/PLE-PL$ 0.36, $ALE-ALE/ALE-PL$ 1.60, median ocular area length/width 0.85, wider behind than in front (anterior width/posterior width 0.48), clypeus/ $ALE-ALE$ 1.50. Chelicera with 11 teeth on promargin of fang furrow. Superior and inferior claws of legs each with two teeth, palpal claw with three denticles.

Opisthosoma globular.

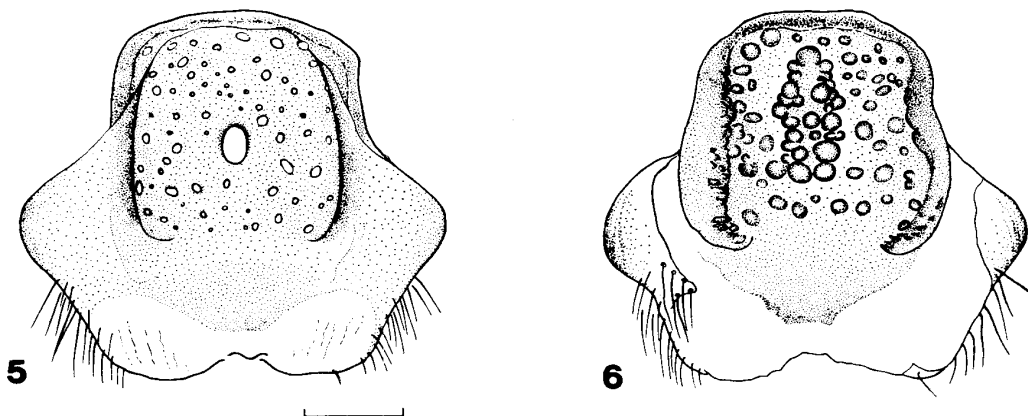
Female genitalia (Figs. 5–6). Anterodorsal pore-plate square, slightly longer than wide, without anterior lobes but with thickened anterior margin, lateral margins also thickened; spermatheca racemose and very large.

Coloration and markings. Prosoma yellowish brown with dark-brown stripes, ocular tubercle black; chelicera orange, palpal coxae and legs, labium and sternum dark-yellowish brown; tarsi and metatarsi of palp and legs black, the other parts of palp and legs orange. Opisthosoma grey with dorsal sclerites chestnut, ventral sclerites and spinnerets dark-yellowish brown.

Type series. Holotype: ♀ and subadult ♂ paratype, Khlong Nakha, 50 m alt., Ranong, South Thailand, 13–VIII–1987, H. ONO leg. (NSMT–Ar 1908–1909).

Range. Known only from the type locality.

Remarks. This new species resembles *L. desultor* distributed on Penang Island and the opposite area at the mainland side of northern Malay in the large body size and the bright coloration. The female genitalic structure indicates a close relationship between the two species. *Liphistius bicoloripes* can be distinguished from the latter by the anterodorsal pore-plate slightly longer than wide and the tibiae of legs orange.



Figs. 5–6. *Liphistius bicoloripes* ONO, sp. nov. — 5. Female genitalia, dorsal view. 6. Same, ventral view. (Scale: 0.5 mm.)

The subadult male paratype shows almost same morphology and coloration as the female holotype, excepting that the body size is 23.31 mm and that the chelicera has only nine teeth.

Liphistius schwendingeri sp. nov.

(Figs. 7–9)

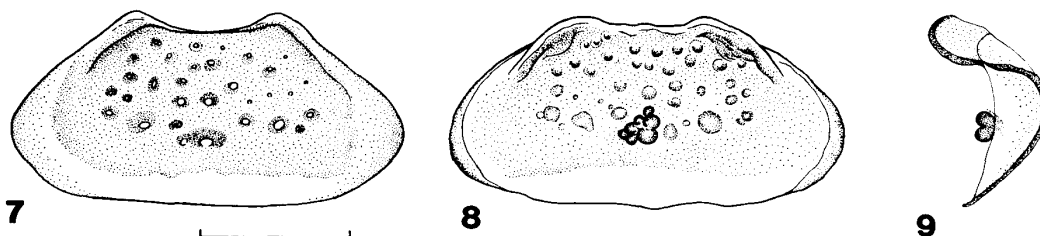
Description (based on the female holotype; adult male unknown). Measurement (mm). Body length 14.20; prosoma length 6.34, width 5.44; opisthosoma length 7.00, width 5.55; sternum length 3.11, width 1.67. Lengths of palp and legs:

	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
Palp	2.56	—	2.61	2.00	3.50	10.67
Leg I	1.28	2.72	2.61	2.44	4.89	13.94
II	1.33	2.89	2.89	2.39	4.11	13.61
III	1.56	3.17	3.00	2.39	4.00	14.12
IV	2.33	5.55	4.17	2.78	5.89	20.72.

Prosoma. Ocular tubercle wider than long (length/width 0.81), ALE>PLE>PME>AME (22: 17: 12: 3), AME–AME/AME–ALE 0.60, PME–PME/PME–PLE 0.80, ALE–ALE/PLE–PLE 0.35, ALE–ALE/ALE–PLE 1.40, median ocular area length/width 0.72, anterior width/posterior width 0.36, clypeus/ALE–ALE 0.86. **Chelicera.** Left chelicera with 13 teeth on promargin of fang furrow, the right one with 12 teeth. Superior claws of legs each with three teeth, inferior claws of legs and palpal claw each with two denticles.

Opisthosoma oval, longer than wide.

Female genitalia (Figs. 7–9). Anterodorsal pore-plate poorly developed, much wider than long, arched, with two anterior lobes; spermatheca racemose but very small.



Figs. 7–9. *Liphistius schwendingeri* ONO, sp. nov. — 7. Female genitalia, dorsal view. 8. Same, ventral view. 9. Same, lateral view. (Scale: 0.5 mm.)

Coloration and markings. Prosoma light yellowish brown with brown markings, ocular tubercle black, chelicera yellowish white, distally yellowish brown; palpal coxae and legs, labium and sternum light yellowish brown, the other parts of palp and legs yellowish brown, blackish brown annulations present on the femora, tibiae and metatarsi. Opisthosoma beige, dorsal sclerites greyish brown mottled with brown, ventral sclerites and spinnerets yellowish brown.

Variation. Female paratype: body length 11.66 mm, with 14 promarginal teeth on its chelicera; subadult male paratype: body length 12.21 mm, with 13 teeth.

Type series. Holotype: ♀, 1 ♀ paratype and 1 subadult ♂ paratype, Khlong Nakha, 50 m alt., Ranong, South Thailand, 12–VIII–1987, H. ONO leg. (NSMT–Ar 1910–1912).

Range. Known only from the type locality.

Etymology. This new species is named after Mr. Peter J. SCHWENDINGER, University of Innsbruck.

Remarks. This new spider was obtained in coexistence with *L. bicoloripes* along a rivulet in a forest. Sympatric occurrence of liphistiid spiders has been known only on Penang Island, Malaysia, where *L. desultor* coexists with *L. murphyorum*. Though one of the species from Khlong Nakha, *L. bicoloripes*, is closely related to *L. desultor* from Penang Island, *L. schwendingeri* does not bear close relationship with *L. murphyorum*. This new species is so peculiar in the shape of its female genitalia that it is considered at present to be an isolated one in the genus *Liphistius*.

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